GODDARD HANDBOOK FOR MANAGEMENT OF PROGRAMS – PROJECTS – PRODUCTS

Volume 2

Program Management

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GODDARD HANDBOOK FOR MANAGEMENT OF PROGRAMS – PROJECTS - PRODUCTS

- Volume 1 – The NASA Program/Project Environment
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2.0 Introduction to Program Management

NASA Policy Directive (NPD) 7120.4 states NASA's policy on Program/Project Management, establishing the management system by which we formulate, approve, implement and evaluate all programs and projects for development and operation of aeronautical and space ground and flight systems and technologies. NASA Procedures and Guidelines (NPG) 7120.5 went on to define programs as major activities within an Enterprise that have defined goals, objectives, requirements, and funding levels, and consist of one or more projects. Although GSFC manages many projects and products, the number of programs is limited to a handful. (E.g. Explorers, the Earth Observing System (EOS), Earth Probes (EP), Solar Terrestrial Probes (STP), Hubble Space Telescope (HST), Networks Mission Services, International Projects, New Millennium, Polar Operational Environmental Satellite (POES) and Geostationary Operational Environmental Satellite (GOES)). This volume of the Handbook is designed to specifically address the management of GSFC programs. The focus of this volume is on the uniqueness of GSFC Program Management, adherence to NPG 7120.5, and compliance with ISO 9001.

An integral part of the Program – Project - Product Handbook, this volume is intended only as a *guide* to Program Management at GSFC. Familiarity with NPD 7120.4, NPG 7120.5, the rest of this Handbook, and the GSFC Quality Management System (QMS) is expected. Programs shall meet all applicable requirements of NPG 7120.5 and Goddard Procedures and Guidelines (GPG). However they can be tailored to meet specific program needs and flexibilities.

The Program Management Volume is presented in three main sections:

- Section 2.2 addresses the GSFC environment, discussing history, culture, and current environmental factors.
- Section 2.3 addresses the Program evolution processes including formulation, implementation, approval and the unique qualities and processes that make GSFC a significant leader in program management.
- Section 2.4 addresses the roles and responsibilities of the Program Manager, discussing such topics as strategic planning, communications, program synergy, advocacy and counseling.

2.1 Summary of Roles and Responsibilities for the Program Manager and Senior Scientist

2.1.1 The Program Manager Responsibility List

The Program Manager is responsible for:

a. Program planning, including recommendation of program objectives, requirements, Implementation guidelines, budget and milestones, and preparation of Program Plans and supporting development of PCA's.
b. Developing, recommending, and advocating program resources.
c. Allocating budget to projects.
d. Establishing support agreements.
e. Executing and overseeing the Program Plan.
f. Controlling program changes.
g. Approving Project Plans and associated changes.
h. Establishing project performance metrics.
i. Integrating the planning and executing of individual projects or programs composed of multiple interdependent projects.
j. Reviewing and reporting program/project performance.
k. Complying with applicable Federal law, regulations, executive orders, and NASA directives.

In pursuit of these responsibilities, the Program Manager is required to develop and maintain a close relationship with the Project Manager(s) and other GSFC officials on the program utilizing sound technical and managerial judgement.

2.1.2 A Responsibility List for a Senior Scientist

The Senior Scientist assigned to a Program Office is typically responsible for:

1. Achievement of scientific goals and objectives of the program, for dealing with the scientific community, and interfacing with the Project Scientist(s).
2. Participating in the development of the AO and obtaining the necessary coordination and approval for the AO. He/she recommends appointments to the Ad Hoc Advisory Subcommittee of the steering Committee and is responsible for preparation of necessary documentation.
3. Forming a team with the Project Scientist(s) and the program/project advocacy and to inform the public of the importance of the program/project.
4. Working together with the Project Scientist(s) to ensure that science objectives of the program/project are met.

2.2 The GSFC Environment

This section discusses the unique implementation aspects of program management at GSFC. It reflects a program management process that is defined by the GSFC history and culture, core competencies, and an organization that enables the Center's program and project implementation.

GSFC is a customer-focused organization with extensive background in program and project management and significant management, technical, and infrastructure resources to apply to its efforts. GSFC is a world leader in research and technology development, and in space flight design. The Center's diverse set of customers and partners includes organizations that are novice through expert in the aerospace market, small to large in size, and located worldwide. These customers, partners and stakeholders can be found within GSFC organizations, at other NASA Centers, other government agencies, academia, industry, and foreign governments.

GSFC is recognized as a world class expert in project management. It manages more individual projects than any other NASA Center. These projects are widely diverse in size, cost, and technical complexity. They are in response to direction from the Earth Science, Space Science, and Human Exploration Enterprises at NASA Headquarters. This expertise has been demonstrated through the successful completion of a large number of missions. GSFC's breadth of technical expertise is a significant contributor to this success. The Center has extensive experience in all aspects of mission/project management, design, development and operations. This capability includes, but is not limited to, spacecraft, instruments, launch vehicles, ground systems, and operations. GSFC's experience involves all aspects of mission/project evolution from a scientist's idea to the final delivery of the data to that scientist, and, frequently, others who utilize the data.

The science interface of the program office with the science community and Headquarters is very strong since GSFC's core competencies include scientific research in Earth and Space Science. This strong interface makes the scientific customer interface more effective, ensuring that customer requirements are understood and met throughout the Program/Project life cycle processes.

In order to enable spaceflight missions, GSFC has significant experienced core competencies in program/project management, end-to-end mission systems engineering, and development of advanced technologies. There is a large civil servant workforce involved in support of this critical work, with extensive industry resources available as needed. GSFC's excellent facilities are available

to meet the diverse needs required for the design and development of flight systems and the enabling of advanced technology.

In order to focus resources on the customer's needs and be responsive to a changing environment, GSFC is organized to be responsive to the delegation of program management responsibilities to the Centers from NASA Headquarters, the need to increase focus on advanced technologies, and the redesign of NASA's processes. The NASA Strategic Plan, the GSFC Strategic Implementation Plan, and Goddard's organization share the same Enterprise structure, processes, and objectives.

The GSFC organizational structure is set up to support the conduct of major programs. Space and Earth Science Directorates (Codes 600 and 900) provide the scientific customer representation on site, while all Goddard directorates support the Formulation, Approval and Implementation Subprocesses. A matrix organization is utilized to optimize the conduct of the individual processes and functions, while each program is supported as a customer by each directorate. The Flight Programs and Projects Directorate (FPPD) is structured to focus the efforts required for this increasing program management activity and the implementation of GSFC's projects. The Applied Engineering and Technology Directorate (AETD) combines the discipline engineering resources at GSFC into an efficient and responsive structure that allows for supporting the growing technical activities with the same quantity of resources, enabling advanced technologies required to meet our customer's goals, and the development of a world class technical workforce. The Systems Technology and Advanced Concepts (STAAC) Directorate, focuses GSFC's systems engineering resources, leads the project formulation activities, manages instrument development, and supports NASA's technology planning and commercialization efforts.

GSFC's program management has been a key to the successful achievement of many of the Agency's strategic goals and objectives through the planning and implementation of programs. The program management role at GSFC varies as a function of the type of program. The variation of program integration with project interdependency within a program is described in Figure 2-1, using a number of NASA programs as examples. For programs with interdependent projects (e.g., HST), the Program Manager provides a high level of program integration to ensure all project interfaces. Other programs have independent projects with common elements (e.g., EOS) and a medium level of integration is required at the program level. For programs with multiple independent projects (e.g., Explorers/Earth Probes), the role of the Program Manger is one of initiating and fostering the projects, and assisting Center management and Headquarters in program implementation. For these types of programs, there is minimal need for cross-project integration.

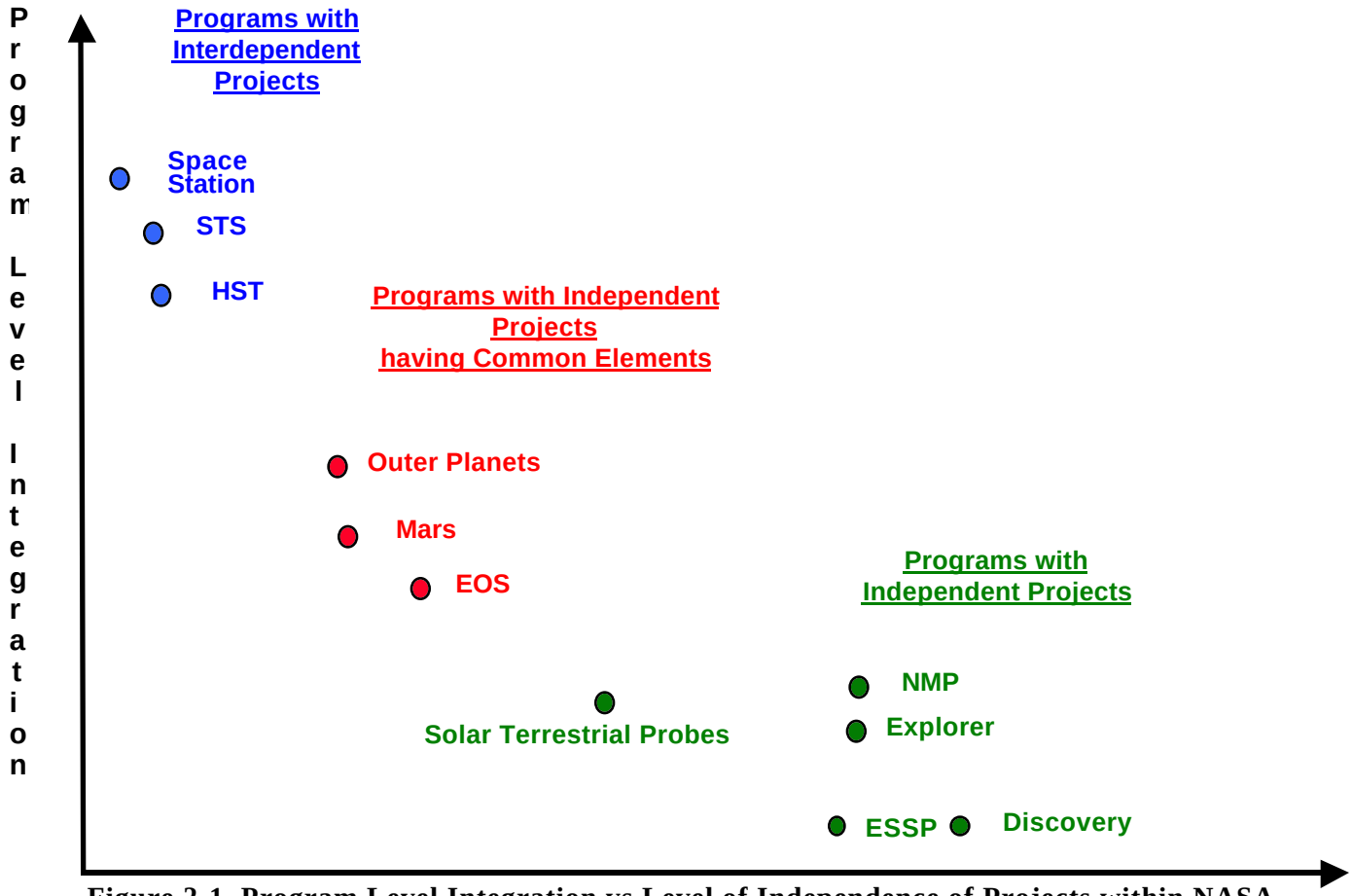

Figure 2-1 Program Level Integration vs Level of Independence of Projects within NASA Programs

2.3 Program Lifecycle Processes

The following section describes the life cycle of a program at GSFC from the initial Formulation through Approval and Implementation, with emphasis on unique aspects of program management at GSFC.

2.3.1 Program Formulation

The Formulation of a new program requires close interaction between the Enterprise Office (normally at NASA Headquarters) and the GSFC Office of the Associate Director (OAD). These are very important events that may involve the establishment of a new budget for a program with strategically defined projects (e.g., Earth Probes). The Formulation of new programs requires considerable attention at NASA top management, Enterprise, science and user community, industry, Administration and Congressional levels. The longstanding impact of a program requires a very careful and thorough Formulation to ensure that:

- Strategic objectives are understood and can be met with planned resources
- The process is in place to deal with new technologies required
- The widest range of possible business opportunities have been explored
- The timing for Formulation of the new program, is correct, the need is compelling, and the capability to implement the program is available.

· Strong interfaces with customers, partners, and stakeholders are developed to assure input to program/project processes.

Program Formulation is led by Associate Center Director (ACD), with support from various GSFC Directorates. The ACD may delegate program and project management responsibility for applicable programs or projects, including authority to appoint program and/or project managers, to the Director of Suborbital Projects and Operations.

The Formulation effort begins officially with the Formulation Authorization (FA) document sent to GSFC from the Enterprise Office. Prior to the issuance of the FA, the ACD appoints a Program Integration Manager (PIM) in the OAD to coordinate the expected program formulation support with the Enterprise and GSFC directorates. There is no clear path for the early coordination of a new program. The OAD coordinates with the relevant science community, Enterprise management, Center management, and key technical and administrative offices who can assist with establishing the program. This coordination ensures a level of understanding between the Enterprise and GSFC that the proposed program is supportive of the Enterprise Strategic Plan and is capable of being formulated with a successful budget initiative.

Following the FA issuance, the Formulation Subprocess begins with enabling activities that are similar to those conducted in the Formulation of a project. The major distinction is the longer life and integration of the program versus a project, which has a distinct beginning and end, and the resulting consideration for the coordinated Formulation, Approval, Implementation and Evaluation of projects during the life cycle of the program. When the range of program options is sufficiently well understood that the Formulation Subprocess can focus on the effort to definitize the program, and a program plan can be produced at GSFC, supported by a Program Commitment Agreement (PCA) at Headquarters, the program enters the Approval Subprocess. A Program Manager is assigned at the beginning of the definitization effort to take responsibility for making program commitments for Approval and Implementation. The new program must adhere to NPG 7120.5. The tailoring of the management of each program is documented in the Program Plan. The additional support plans required for the Approval Subprocess are similar to those required in Formulating a project.

Throughout the creation of a new program, the Formulation effort requires a high level of advocacy and a very close coordination with the Enterprise Office and the science/user community or customer of the program.

2.3.2 Program Approval

The Program Formulation Subprocess for a new program creates the PCA and the Program Plan in accordance with the NPG 7120.5 formats. These two documents shall be available and maintained for the Non-Advocate Review (NAR) and ready for signature at the time of the approval review within the NASA PMC. (A review by the Goddard PMC is likely to occur prior to the NASA PMC approval review.) The results of the NAR and/or Independent Assessment (IA) are also presented to the NASA PMC, by the Enterprise Associate Administrator (EAA). The approval review provides the decision regarding the initiation of program implementation, or the continuation of program formulation, and resubmission of a program for approval at a later date. If necessary, agreements (PCA and Program Plans) shall be modified, reviewed by the NASA Program Management Council (PMC), and signed by the approving official upon resolution of NASA PMC recommendations.

The Program Plan is the key vehicle for defining the program objectives, responsibilities, resources and GSFC commitments as well as establishing any other key agreements, such as tailoring of requirements and procedures, among the Program Manager, Center Director, and EAA. The Program Manager should lead the drafting of the document and the negotiations with Center and Enterprise managers. NPG 7120.5 provides a recommended outline and content for the Program

Plan. The Center review draft should be reviewed at the Center and Directorate levels before forwarding it to Headquarters. All affected directorates must be given an opportunity to review and comment. Each of the directorates that provide comments should be provided feedback as to the action taken and the rationale. While an informal advanced copy can be shared with the Headquarters office, the official Headquarters review draft must be approved by the Center Director before submittal to Headquarters.

2.3.3 Program Implementation

At this point, a self-contained program, which has defined projects, proceeds with implementation. Program level integration is provided to ensure the interfaces. For the implementation of a program which involves a continuum of projects, new projects can be in various stages of Formulation, Approval, and Implementation, which then require an adjustment to the current program Life-Cycle Cost (LCC). This activity requires the program office to conduct concurrent processes where new projects are being formulated, integrated and advocated for approval, while approved projects are being implemented. This parallel activity is illustrated in Figure 1-3 from NPG 7120.5. The approval of these projects is described in Volume 3 of this Handbook. The Program Plan and PCA are amended, as appropriate, for the addition of each new project.

The program office represents all projects throughout this life cycle to the Governing Program Management Council (GPMC). The GPMC may be at Headquarters or at a Field Center, if designated by the NASA PMC, as documented in the Program Plan. The continuation of a program will require advocacy on the part of the program office to adapt to the changing environment in the Administration, Congress, NASA management, new technology, etc. This advocacy is closely coordinated with the Enterprise to ensure the continuing vitality of the program and the new projects that comprise the program.

2.3.4 Program Evaluation

The evaluation of a program and its projects is specified in the Program Plan. Independent evaluation consists of the NAR and possibly an IA (if directed by Headquarters or requested by the program office) during program approval, and one or more Independent Annual Review's (IAR's) during program implementation. Special reviews, such as External Independent Readiness Review (EIRR) may be directed by the EAA as required. The reviews, specified by the program for the projects, are also conducted as part of the Evaluation Subprocess. In this regard, the program office is evaluating the performance of the individual projects and presenting monthly status to the GPMC, while the program office is assisting and stabilizing the environment for the conduct of the project within the program.

2.4 Program Manager Roles and Responsibilities

The Program Manager should view her/himself as the one person in NASA who is responsible for the program and must ensure overall effective management. It is a critical leadership position. Within a Program, the Project Managers manage the individual projects; the Program Manager manages their environment and adjusts the focus of projects to produce integrated program results to ensure customer satisfaction.

No attempt to reinterpret NPG 7120.5 is made here; rather the key roles of a Program Manager as a leader, and some insights regarding their fulfillment, are offered. The key roles of a Program Manager are:

- Set the tone and character of the program.
- Advocate the program and its projects.
- Lead strategic planning.
- Plan and integrate the program budget
- Confirm program and projects are meeting their commitments
- Ensure program-wide efficiency and synergy.
- Promote effective communication to and from the environment.
- Establish consistent policies and procedures.
- Help Project Managers focus on their projects.
- Advise and counsel Project Managers.

The following paragraphs address each of these roles.

2.4.1 Set the Tone and Character of the Program

The tone and character of a program are its "personality" and influences how people react to and support the program. The Program Manager must establish in his/her own mind the vision, values, and principles on which his/her leadership of the program will be based. Discussions with customers (e.g., science community), Center management, Headquarters EAA management, and one's peers can validate or modify these internal ideas and influence the perceived character of the program. Even if taking over in the middle of the program, this role is important to establishing one's leadership as well as others' future support and expectations for the program.

The tailoring of NPG 7120.5 requirements and processes, in conjunction with the Center Director and EAA, is one of the key methods that a Program Manager can use to define the character of the Program. While the Program Manager can initially influence the tone and character of the program by advocacy and communication, over the long-term it will be influenced mostly by his/her decisions and actions.

Projects within a program may be formulated and managed at other Centers. The Program Manager should take the extra effort to learn and understand the management structure and people at that other Center and, in return, provide clear communication of the program tone and character, policies, expectations, and integration. Personal involvement in formulation of projects managed at other Centers is particularly important to help bridge any organizational communication gaps.

2.4.2 Advocate the Program and Its Projects

The Program Manager must gain an in-depth understanding of the purpose of the program as defined by the benefits to the customer community, NASA, the nation, and, perhaps, the world. The Program Manager should use this understanding to advocate (promote and defend) the program, the appropriateness of its resource requirements, the logic of its project set and how it achieves program goals, and the relationship of the projects to one another. The Program Manager advocates the elements of his/her program by such activities as strong participation in NASA and external committees and developing support relationships within the Programs/Projects.

Clearly, the Program Manager is not alone in this advocacy or there wouldn't be a program. The Program Scientist (often from Headquarters) and GSFC Project Scientist are key advocates and spokespersons for science programs. Non-science programs typically have similarly knowledgeable members of the customer community who want to help advocate the program. The EAA management team at Headquarters is the prime focus of advocacy within NASA. Center management, including the OAD, FPPD, and STAAC are key allies, especially during program Formulation. The Public Affairs Office can help with outreach and educational efforts. Often other NASA Centers, other government agencies, or private industry become natural allies. The Program Manager should foster and coordinate advocacy among the broadest base possible. During program Formulation and Approval, advocacy is a major role. During Implementation it is less prominent; but is still significant, especially during the budget cycle and during the Formulation of new projects within the program.

2.4.3 Lead Strategic Planning

During program Formulation, strategic planning is the Program Manager's primary role. He/she must establish program objectives, requirements, and resources; structure and organize the program; identify and recruit key personnel; build strong interfaces with the customers, partners, and stakeholders; facilitate development of the PCA and Program Plan; and plan for Formulation of the initial project(s).

The program organizational structure and associated roles and responsibilities within the program depend strongly on the interdependence of the projects within the program and the scope of each project's responsibilities. The program resources management may be distributed or centralized. Each project may have greater or lesser independence or staffing. For example, the HST Program has two projects – Servicing and Operations. Each has extensive scope, yet are very interdependent. Each of the Hubble projects has a full project staff as well as collocated technical personnel. Yet the Hubble Program Office retains overall leadership as well as key control functions, such as integrated schedule management and configuration control, due to the highly interdependent nature of the projects. As an alternative example, the Explorers Program has a multitude of relatively small projects that are unrelated to one another. The project staffs vary depending on their size and the extent of in-house responsibility. The Program Office seeks synergy and consistency among the projects and manages all the resources to provide maximum flexibility among the projects, but allows each project to be managed with a high degree of independence.

One of the most far-reaching decisions the Program Manager will make is in the staffing of the key members of the program. Foremost are the Deputy Program Manager and Program Business Manager. Not all programs have a Deputy Program Manager. Some Program Managers prefer to use one of the Project Managers as a deputy and use the saved personnel allocation for another position. The Program Business Manager is a key member of the management team and should be selected in close consultation with the Deputy FPPD Director for Business Management.

The Program Manager and his/her staff should be active in new project Formulation. This ensures consistency with program requirements, resources, policies, efficiency, and synergy. It also provides the Program Manager with personal insight into each project. The exact nature of the Formulation will depend on whether the project is a directed or competed project:

1. On competed projects, the GSFC program office role is directed by the Enterprise and specified in the Program Plan and can include support of the:

    a) Preparation of the AO references for Headquarters prior to release.
    b) Proposal evaluation as ex officio non-voting members.
    c) Management of the early Formulation/enabling activities of the selected projects prior to downselection.
    d) Management of Formulation Definitization of the selected projects post downselection.
    e) Management of the Implementation of the selected projects.

Presently, Code Y requests program support for all the items above while Code S requests support for items a, c, d, and e. Additionally, Code S support for item c is presently under review where a GSFC proposal is included in the downselection process.

2. On directed projects, the STAAC Directorate plays a major role. The Project Formulation Manager (PFM), from the STAAC Mission Development office, leads the formulation team. The PFM reports to the Program Manager, as the customer of STAAC. With the concurrence of Headquarters and the GSFC Director, the Director of FPPD, supported by the STAAC Director, appoints a Project Manager no later than the beginning of the Definitization activity to lead the effort through the remainder of the Formulation Subprocess and then the Implementation Subprocess. No matter the specifics of the Formulation Subprocess, it is important that the Program Manager clearly communicate overall Formulation/Implementation requirements and constraints to the project leadership.

Throughout program Implementation, strategic planning should continue. Regular interaction with the customer community and Headquarters management should provide opportunities to identify any evolution in customer or NASA objectives as well as their satisfaction with the program. Attendance at customer community conferences, Headquarters advisory panel meetings, or, if appropriate, occasional program workshops provide good vehicles to interact with the customer community. The Program Manager should advocate and ensure customer involvement throughout the Program and its Project. Technology and launch vehicle capabilities should be monitored to assess their potential for improving or impacting the program.

2.4.4 Plan and Integrate the Program Budget

The funding requirements given in the Program Plan are likely to be a snapshot in time. As the program is developed, funding requirements are further defined in the Program Operating Plan (POP) and will need to be justified and defined. The NASA annual budget POP process will update the specifics of the program budget levels, phasing and allocations. The Program Plan will reflect the intent to update the budget during the POP cycle or in the Program Plan, updated annually at the end of the POP cycle. Internal to GSFC, similar annual planning processes determine travel and manpower budgets for the program. As part of these resource-planning efforts, the program office will have to integrate the requirements from the different projects as well as its own, and advocate the required budget(s). Once a program allocation is received, the Program Manager will have to decide on project-level resource allocations.

2.4.5 Confirm Program and Projects Are Meeting Their Commitments

As the one person responsible for program success, the Program Manager leads the evaluation process to confirm that the program and projects are meeting their commitments during Implementation. The vehicle for defining Program Evaluation is the Project Plan for each project. Personal and customer involvement, informal meetings with the Project Manager's, program staff meetings, monthly review preparations, active participation in the GSFC budget planning approval and execution process, and independent reviews are candidate methods a Program Manager can apply to fulfill this role. Care should be taken not to over-tax the projects with oversight. Agreements should be documented with each Project Manager in the Project Plan and adhered to. Depending on the agreements in the PCA and Program Plan, the program and/or projects may undergo independent Center or Headquarters evaluation reviews such as the IAR and EIRR.

2.4.6 Ensure Program-wide Efficiency and Synergy

From where he/she stands, the Program Manager can see the gamut of projects under his/her management. This visibility puts the Program Manager in the unique situation of being able to find ways to leverage the projects so that common elements will benefit all. Since programs are generally made up of projects having similar scientific disciplines (e.g., Earth Sciences, Space Sciences, Technology), there are many facets of these projects that are similar, in addition to those of general management. One way that a Program Manager can leverage his/her projects is by sharing resources. This can be done for programs with interdependent projects as well as those with independent projects.

With budgets becoming increasingly smaller and the need to be more efficient, the Program Manager must exercise leadership in ensuring that similar project requirements are met with the same or similar implementations when advantageous. While every project within a program need not necessarily look like every other one program management it provides an opportunity to investigate areas of system, hardware, document, personnel, process and procedure commonality. In addition, management control tools such as scheduling, planning, resource allocation, and configuration control should be considered for common implementation. Finally, by maintaining good communications within the program elements, common solutions to technical problems can be adopted where appropriate. Of course decisions to implement common solutions must be based upon the requirements of each project. It has been shown, however, that when Project Managers are willing to keep an open mind in looking at these areas of shared resources, significant synergism among projects occurs. These lead to savings of time and/or dollars.

2.4.7 Promote Effective Communication To and From the Environment

In order for a program to be successful, the Program Manager needs to be mindful of the external environment at GSFC, Headquarters, other NASA Centers, the science and technology communities, etc. Open communication to and from that environment is especially important. Impediments to a free flow of information must be avoided. On the other hand, Project Managers must be sure that the Program Manager is aware of significant discussions, meetings, agreements, etc. Surprises to management should be avoided.

The Program Manager is dependent on external organizations for the political, programmatic, financial and technical support to properly execute the program. This is true whether or not the projects within the program are directly managed by GSFC, by another NASA Center, or by a Principal Investigator (PI) in the PI mode. There is no room, in a properly managed program or project, for supporting organizations and personnel not to be aware of what is happening and to not have them be part of the decision-making process when it is appropriate to do so. This is particularly true for customers or stakeholders, without whose support most programs would not exist.

The customer or stakeholder should be a part of every project team and should be in the communications loop. Their support is invaluable and they should be considered a resource for the Program or Project Manager. The Program Manager, in setting the tone and character of the program, must ensure that communications to and from all parts of the external environment are properly established and implemented.

2.4.8 Establish Consistent Policies and Procedures

In order to make the program more streamlined and efficient, the Program Manager should take the time to investigate areas of system, hardware, NASA Information Technology (IT), documentation, process and procedure commonality between his/her projects. Management control tools such as scheduling, planning, resource allocation, and configuration managment should also be considered for common usage. In addition, the Program Manager should strive to have a GSFC QMS compliant program/project management system with Safety Requirements & Quality Assurance (SR&QA) that is essentially common to all projects. Tailoring to meet the specific requirements of each project should then be done. Project policies must be clear and concise. Program Managers directing new projects should consider elements of other projects while integrating their own projects' activities. The Program Manager must ensure that Project Plans contain program-compatible requirements.

Policies and procedures for the development of program/project budgets and the methods for tracking and reporting against them should be made consistent over the entire program, including conformance to GSFC procedures for contractor financial management reporting, contingency and Allowance for Program Adjustment (APA) and LCC's. Exceptions can be made if warranted and clearly defined.

Most projects require similar documentation. In order to make review by the Program Manager and upper management effective and efficient, a boilerplate for documentation and reporting should be established and adhered to as closely as possible. All Project Managers should know what the Program's documentation requirements are (see GPG 1060.2). The Program Manager must ensure that they do.

2.4.9 Help Project Managers Focus On Their Projects

The Program Manager should never attempt to micro-manage. Rather, the Program Manager should act as a filter and facilitator. Unwanted interference or distractions coming from the external environment should be prevented from reaching the Project Managers as much as possible. The Project Managers should be able to count on the support of the Program Manager in advocating and fighting for budgetary, manpower and facility resources.

There are other requirements imposed on projects from GSFC, Headquarters and the "community" at large. The Program Manager should relieve the Project Managers of these unwanted tasks by taking responsibility for managing these requirements directly when possible. He/she should do everything possible to ensure that requirements that do not add value to a project are not allowed to distract the Project Managers from their primary objective, i.e., successfully managing their projects.

2.4.10 Advise and Counsel Project Managers

In addition to being a filter and facilitator, the Program Manager should nurture and council his/her Project Managers when needed. Since not all Project Managers are equal in their experience or ability, the Program Manager must act as a teacher to those Project Managers that require the additional support. Conversely, the Program Manager should not interfere with Project Managers who do not require additional care and counseling.

Since the Program Manager has oversight of all the projects within the program, he/she also has the ability to assist the Project Managers whenever the situation demands it. By acting as a "deputy" Project Manager, on an ad hoc basis, the Program Manager can provide enormous relief to the Project Manager.